

CE

## Safety Instructions

## IMPORTANT MESSAGES

**⚠ DANGER**

**⚠ WARNING**

**⚠ CAUTION**

Indicates a potentially hazardous situation which if not avoided, may result in minor injury or moderate injury.

(Note 2):JIS B 8370:Pneumatic system axiom.

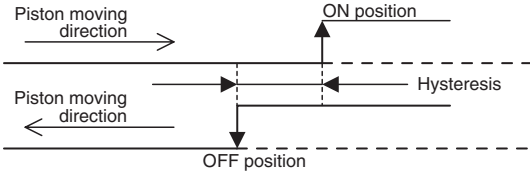
## ⚠ WARNING

1) Conditions and environments beyond the given specifications, or if product is used outdoors.

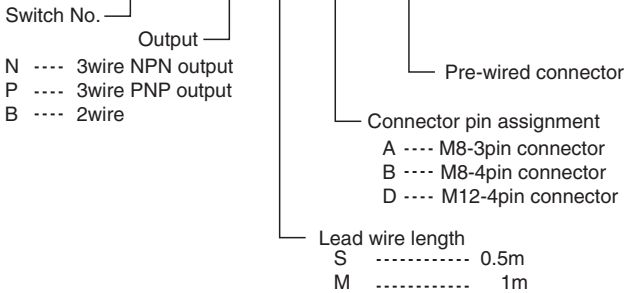
## ⚠ WARNING

④ Do not allow short circuit of loads.  
All models of switches do not have built-in short circuit protection circuits.  
Note that if a load is short circuited, the switch will be instantly damaged  
because of excess current flow into the switch.

## ⚠ WARNING



## D-F8



## Specification

Switch model number	D-F8N	D-F8P	D-F8B
Wiring	3 wire		2 wire
Output	NPN	PNP	—
Application	IC circuit/Relay/PLC		24V DC Relay/PLC
Power voltage	5/12/24V DC (4.5 to 28V DC)		—
Current consumption	10mA or less		—
Load voltage	28V DC or less	—	24V DC(10 to 28V DC)
Load current	40mA or less	80mA or less	2.5 to 40mA
Internal voltage drop	1.5V or less	0.8V or less	4V or less
Current leakage	100 $\mu$ A or less at 24V DC		0.8mA or less
Operating time	1ms or less		
Indication light	ON: Red light emitting diode		
Electrical entry system	Grommet		
Lead wire	Oilproof heavy-duty vinyl cord $\phi$ 2.7, 0.18mm <sup>2</sup> , 2 wire (D-F8B), $\phi$ 2.7, 0.15mm <sup>2</sup> , 3 wire (D-F8N,D-F8P)		
Impact resistance	1000m/s <sup>2</sup>		
Insulation resistance	50M $\Omega$ or more at 500V DC mega		
Withstand voltage	1000V AC for 1 minute (lead wire, between cases)		
Ambient temperature	-10 to 60 °C		
Protection structure	IEC529 standard IP67, JISC0920		

Diagram illustrating the components of the DF88-SMC connector assembly:

- Vinyl sheath cable
- Indicator light
- Mounting screw (M2.5 × 4L)

**D-F8N**

DC(+) Brown

OUT Black

DC(-) Blue

Load

Power supply

Switch main circuit

**D-F8P**

DC(+) Brown

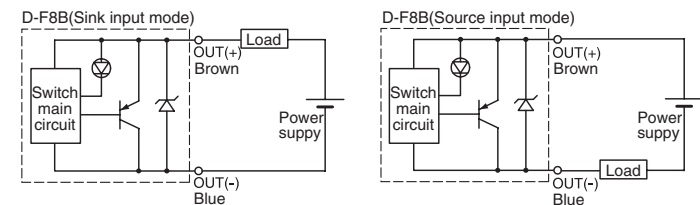
OUT Black

DC(-) Blue

Load

Power supply

Switch main circuit



The diagrams show three types of connectors:

- M8-3pin connector:** A circular connector with three pins labeled 1, 2, and 3. Pin 1 is at the top, pin 2 is at the bottom, and pin 3 is on the right.
- M8-4pin connector:** A circular connector with four pins labeled 1, 2, 3, and 4. Pin 1 is at the top, pin 2 is at the bottom, pin 3 is on the left, and pin 4 is on the right.
- M12-4pin connector:** A circular connector with four pins labeled 1, 2, 3, and 4. Pin 1 is at the top, pin 2 is at the bottom, pin 3 is on the left, and pin 4 is on the right.

```

graph TD
    Start([Trouble occurs]) --> TC[Trouble condition]
    TC -- "Stay OFF (sometimes ON)" --> IL1[Indicator light]
    TC -- "Stay ON (Sometimes OFF)" --> IL2[Indicator light]
    
    IL1 -- "Stay OFF" --> SV[Source voltage or load voltage]
    IL1 -- "Normal" --> W1[2wires / 3wires]
    W1 -- "2wires" --> LSC1[Load spec.check(1)]
    W1 -- "3wires" --> WC1[Wiring (output)check]
    LSC1 -- "Normal" --> A1((A))
    LSC1 -- "Abnormal" --> C1((C))
    WC1 -- "Normal" --> A2((A))
    WC1 -- "Abnormal" --> B1((B))
    
    SV -- "Normal" --> R[Replace the Switch]
    SV -- "Abnormal" --> B2((B))
    R -- "Normal" --> D1((D))
    R -- "Abnormal" --> E1((E))
    
    IL2 -- "Stay ON" --> IL2
    IL2 -- "Normal" --> W2[2wires / 3wires]
    W2 -- "3wires" --> A3((A))
    W2 -- "2wires" --> LSC2[Load spec.check(2)]
    LSC2 -- "Normal" --> A4((A))
    LSC2 -- "Abnormal" --> F1((F))
    
    IL2 -- "Stay OFF" --> B3((B))
  
```

- (A) --- Switch output parts failure(replace)
- (B) --- Check wiring and correct fault
- (C) --- Replace switch 2 wires --> 3 wires
- (D) --- Switch failure
- (E) --- Replace cylinder. Detectable magnet field in adequate (No magnet)
- (F) --- Replace PLC input board or replace switch 2 wires --> 3 wires

Diagram illustrating the connection of an actuator to an auto switch. The actuator is shown as a long rectangular block with a circular port on the left. The auto switch is shown as a vertical assembly with a mounting screw. An arrow points from the actuator to the auto switch, indicating the connection point.

Based on A and B dimensions in the actuator catalogue, set the switch.

Technical drawing of the SMC D-FW sensor, showing side and front views with dimensions and labels.

**Side View Dimensions:**

- Total length: 500(3000)(5000)
- Section A: 3.1
- Section B: 10.9
- Section C: 3

**Front View Dimensions and Labels:**

- Mounting gscrow M2.5×4.0
- Slotted screw
- Indicator lamp
- Dimensions: 4.3, 2, 2.8, 10, 4.6
- Manufacturing code (D-FW SMC)
- Most sensitive position (8)

Technical drawing of the D-Fgp SMC sensor assembly, showing dimensions and components.

**Dimensions:**

- Overall length: 500(3000)/5000
- Threaded section diameter:  $\phi 2.7$
- Section lengths: 3.1, 10.9, 3
- Head dimensions: 4.3, 2, 10, 4.6, 2.8
- Base width: 8

**Components and Labels:**

- Mounting screw: M2.5x4
- Slotted screw
- Indicator lamp
- Manufacturing code: D-Fgp SMC
- Most sensitive position

Technical drawing of the SMC D-P88 sensor assembly. The drawing includes a side view of the sensor with dimensions: 3.1, 10.9, 3, 500(3000)/(5000), and a diameter of 2.7. A detail view shows the top of the sensor with dimensions: 4.3, 2, 2.8, 10, 4.6, and 4. Labels include: 'Mountin gscrow M2.5', 'Slotted screw', 'Indicator lamp', 'Manufacturing code', 'D-P88 SMC', and 'Most sensitive position'.

Connector size M8

31.4

Connector size M12

44

14

Year

Mark	Year
K	2006
L	2007
M	2008
N	2009
O	2010
P	2011
Q	2012
⋮	⋮

Month

Mark	Month
O	January
P	February
Q	March
R	April
S	May
T	June
U	July
V	August
W	September
X	October
Y	November
Z	December

## SMC Corporation

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